HW#6H: Real World Quadratics – Day 1

Honors Geometry

Due Date: Friday, Sept. 12th 2014

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ TP: \_\_\_\_\_\_\_

**Failure to show work on all problems or use complete sentences will result in a LaSalle.**

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| 1) During a cliff dive competition, a diver begins a dive with his center of gravity 70 feet above the water. The initial vertical velocity of his dive is 8 feet per second.  a. Write an equation that models the height h (in feet) of the divers center of gravity as a function of time (seconds): **h(t) = -16t2 + \_\_\_t + \_\_\_**  b. How long after the diver begins his dive does his center of gravity reach the water?  c. What is the maximum height of his dive?  d. How long does it take the diver to reach his maximum dive? | |
| 2) You throw a wad of used paper towards a wastebasket from a height of **1.3** feet above the floor with an initial vertical velocity of **3** feet per second. The flight of the paper wad can be modeled with the function **h(t) = -16t2 + 3t + 1.3**, where *h* represents the height (in feet) of the paper wad *t* seconds after it was thrown.  a) What is the maximum height of the wad of paper?  b) After how many seconds does the wad of paper reach its maximum height?  c) At what time does the wad of paper hit the ground? | |
| Mixed Review (Do not GRASP! Solve Mixed Review on this sheet.) | |
| 3) What is the quadratic equation with solutions  x = -1 and x = 12? | 4) Find the solutions to the quadratic equation: |
| 5) What is the sum of all values for x that satisfy the equation: | 6) Complete the square: 4x2 + 4x = 3 |